

C L A I M S

1. A cutting machine comprising a machine frame, an anvil roller rotatably mounted on the machine frame about a rotary axis and having an anvil surface, a cutting tool mounted on the machine frame for rotation about a rotary axis, with a cutter interacting with the anvil surface and with supporting rings which are held on the cutting tool and support the cutting tool relative to the anvil roller with their supporting ring surfaces and/or vice versa, wherein the diameter of the surface of each supporting ring is adjustable by radial stretching of the supporting ring within the range below an elastic expansion limit of its material by means of an expansion device.
2. A cutting machine according to claim 1, wherein the expansion device has interacting wedge surfaces which are adjustable in their position relative to each other.
3. A cutting machine according to claim 1, wherein at least one of the wedge surfaces is in the form of a conical surface relative to the rotary axis.
4. A cutting machine according to claim 3, wherein both wedge surfaces are in the form of conical surfaces relative to the rotary axis.
5. A cutting machine according to claim 3, wherein one of the wedge surfaces is an internal wedge surface and the other is a corresponding external wedge surface, which are movable relative to each other in a direction parallel with the rotary axis.
6. A cutting machine according to claim 4, wherein an internal wedge surface is arranged on a radially expandable element carrying it.
7. A cutting machine according to claim 6, wherein in all diameter adjustments of the supporting ring surfaces the internal wedge surface is seated

on the external wedge surface with elastic expansion of the element carrying the surface.

8. A cutting machine according to claim 1, wherein the external wedge surface is provided on an expansion member arranged on the cutting tool.

9. A cutting machine according to claim 7, wherein the radially expandible element carrying the internal wedge surface and the expansion member are movable relative to each other in the direction of the rotary axis.

10. A cutting machine according to claim 8, wherein the radially expandible element carrying the internal wedge surface and the expansion member are fixable in their various positions relative to each other on the cutting tool or on the anvil roller.

11. A cutting machine according to claim 10, wherein the radially expandible element and the expansion member are positionable in a different distance from an end face of the cutting tool or the anvil roller.

12. A cutting machine according to claim 11, wherein the radially expandible element or the expansion member are positionable by a distance element in different distances from the end face of the cutting tool or the anvil roller.

13. A cutting machine according to claim 6, wherein the radially expandible element is the supporting ring itself.

14. A cutting machine according to claim 5, wherein the external wedge surface is arranged on a central expansion member.

15. A cutting machine according to claim 1, wherein the supporting ring is braceable against an end face of the cutting tool or of the anvil roller.

16. A cutting machine according to claim 13, wherein the supporting ring is positionable against the cutting tool with an adjustable distance from the end face of the cutting tool or anvil roller according to the elastic expansion state.
17. A cutting machine according to claim 16, wherein the supporting ring is positionable in different distances from the end face by distance elements.
18. A cutting tool rotatable about a rotary axis, with a cutter which interacts with an anvil surface of an anvil roller rotatable about a rotary axis, and with supporting rings which are held to the cutting tool and support it relative to the anvil roller with their supporting ring surfaces, wherein for each supporting ring the diameter of the supporting ring surface is adjustable by radial expansion of the supporting ring within the range below an elastic expansion limit of its material, by means of an expansion device.
19. A cutting tool according to claim 18, said cutting tool being constructed in accordance with one of claims 2 to 17.
20. An anvil roller rotatable about a rotary axis, comprising an anvil surface which interacts with a cutter of a cutting tool rotatable about a rotary axis, and further comprising supporting rings which are held to the anvil roller and support it relative to the cutting tool with their supporting ring surfaces, wherein for each supporting ring the diameter of the supporting ring surface is adjustable by radial expansion of the supporting ring within the range below an elastic expansion limit of its material, by means of an expansion device.
21. An anvil roller according to claim 20, said anvil roller being constructed in accordance with one of claims 2 to 17.